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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/567,559	02/08/2006	Dongqi Qian	59369-227754	9205
26694	7590	06/29/2007		
VENABLE LLP P.O. BOX 34385 WASHINGTON, DC 20043-9998			EXAMINER MEYER, KATY E	
			ART UNIT 3618	PAPER NUMBER
			MAIL DATE 06/29/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/567,559	Applicant(s) QIAN, DONGQI	
	Examiner Katy Meyer	Art Unit 3618	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) \_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                 | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

## **DETAILED ACTION**

### ***Specification***

The disclosure is objected to because of the following informalities: "Summary" is misspelled in the title of the Summary of Invention section (page 2).

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawakami (US 6,038,501) in view of Kim (US 5,475,600).**

Kawakami discloses self-determination position device of a robot comprising: a robot body (20); two driving wheels (24), two power portions, each comprising a decelerator (32) and a motor (28), and two driven wheels (22). Kawakami discloses sensors that measure the angles of rotation of the motors. Kawakami does not disclose sensors that measure the angles of rotation of the driven wheels. Kim teaches a self-determination position device of a robot (see Fig. 7(B)) comprising two driven wheels (26), on which there is a plurality of grids (25) along the circumference and a pair of sensors (27, 28) including an emitting and receiving part. The sensors measure the angles of rotation of the wheels and use the information to calculate the position of the robot body (see column 5, lines 14 – 33). It would have been obvious to one of

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ordinary skill in the art at the time the invention was made to make the device disclosed by Kawakami with the sensor location taught by Kim, so that movement is recorded only when the wheels move (see Kim, column 5, lines 30 – 33).

While Kim only teaches one pair of sensors, the one pair has the same effect as the two pairs disclosed by applicant. Since applicant has not shown how the use of two pairs of sensors is necessary for the function of the device, the number of pairs of sensors is considered a matter of design choice.

**Claims 5 – 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawakami (US 6,038,501) in view of Kim (US 5,475,600) as applied to claim 1 above, and further in view of Shimbara et al. (US 5,925,080).**

Kawakami and Kim meet all the limitations of the claimed invention, but do not disclose two driven wheels located in front or behind two driving wheels.

As for claim 5, Shimbara et al. teach two driven wheels (6, 7), both of which are in front of both driving wheels (4, 5). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device taught by Kawakami and Kim with the driven wheels in front, as taught by Shimbara et al., to aid in the turning and maneuvering of the device.

As for claim 8, Shimbara et al. teach first and second driven wheels (6, 7) which rotate on an axle line perpendicular to the horizontal plane (see column 4, lines 43 – 46).

As for claims 6, 7, and 9, Kim teaches an extending arm having two ends extending along two outsides of each driven wheel, and the emitting and receiving part of the sensor pairs are on respective ends of the extending arm (see Fig. 7(B)).

As for claim 10, applicant does not show any reason why the placement of a second pair of sensors has any technical relevance to the function of the device. The location of a second pair of sensors is considered an obvious design choice.

#### ***Allowable Subject Matter***

Claims 2 – 4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katy Meyer whose telephone number is 571-272-5830. The examiner can normally be reached on Monday - Friday, 7:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Ellis can be reached on 571-272-6914. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
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J. ALLEN SHRIVER  
PRIMARY EXAMINER